

VETERINARY DISASTER RESPONSE AT THE NATIONAL LEVEL

BY

COLONEL KATHLEEN MILLER
United States Army

DISTRIBUTION STATEMENT A:

Approved for Public Release.
Distribution is Unlimited.

USAWC CLASS OF 2009

This SSCFP is submitted in partial fulfillment of the requirements imposed on Senior Service College Fellows. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.



U.S. Army War College, Carlisle Barracks, PA 17013-5050

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188		
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 10-04-2009		2. REPORT TYPE Civilian Research Paper		3. DATES COVERED (From - To) August 2008 - April 2009	
4. TITLE AND SUBTITLE Veterinary Disaster Response at the National Level			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S) COL Kathleen Miller, USA			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of Health and Human Services 200 Independence Ave., SW Suite 638-G Washington, DC 20201-0004			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) RADM Ann R. Knebel, RN, DNSc U.S. Public Health Service Deputy Director, Preparedness and Planning Office of Preparedness and Emergency Operations Department of Health and Human Services			10. SPONSOR/MONITOR'S ACRONYM(S) USPHS, OPEO, DHHS		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION / AVAILABILITY STATEMENT DISTRIBUTION A: UNLIMITED					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The U.S. Department of Health and Human Services' (DHHS) mission is to protect the health of all Americans; in particular those who are not able to help themselves. At question is how animals fit into this mission. The attachment people feel toward their pets – referred to as the human-animal bond – is real, and separation can affect the well-being of both. Where DHHS could play a prominent role in supporting this bond is in the following areas: educating the public, healthcare providers, and disaster responders as to the importance of animals to human health; providing strategic level veterinary clinical and public health guidance by embedding U.S. Public Health Service (USPHS) veterinarians on key federal teams; restructuring the National Veterinary Response Teams (NVRTs) by reestablishing a public/private partnership with the American Veterinary Medical Association; and establishing a working group to plan how to accomplish these recommendations and improve federal agency interaction.					
U15. SUBJECT TERMS Human-animal bond, animal disaster response, National Veterinary Response Team, Veterinary Medical Assistance Team, public/private partnership					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UNLIMITED	18. NUMBER OF PAGES 46	19a. NAME OF RESPONSIBLE PERSON Robert D. Riffle, Program Adviser
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED			19b. TELEPHONE NUMBER (include area code) (202) 260-9623 or (703) 409-6448

USAWC CIVILIAN RESEARCH PROJECT

VETERINARY DISASTER RESPONSE AT THE NATIONAL LEVEL

by

Colonel Kathleen Miller
United States Army

Rear Admiral Ann Knebel
Department of Health and Human Services
Project Adviser

Colonel Bob Driscoll
Project Adviser

This CRP is submitted in partial fulfillment of the requirements for Military Education Level 1 (MEL 1) of the Senior Service College Fellowship Program – Academic Year 2009.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Colonel Kathleen Miller

TITLE: Veterinary Disaster Response at the National Level

FORMAT: Civilian Research Project

DATE: 9 March 2009 WORD COUNT: 8,018 PAGES: 44

KEY TERMS: Human-animal bond, animal disaster response, National Veterinary Response Team, Veterinary Medical Assistance Team, public/private partnership

CLASSIFICATION: Unclassified

The U.S. Department of Health and Human Services' (DHHS) mission is to protect the health of all Americans; in particular those who are not able to help themselves. At question is how animals fit into this mission. The attachment people feel toward their pets – referred to as the human-animal bond – is real, and separation can affect the well-being of both. Where DHHS could play a prominent role in supporting this bond is in the following areas: educating the public, healthcare providers, and disaster responders as to the importance of animals to human health; providing strategic level veterinary clinical and public health guidance by embedding U.S. Public Health Service (USPHS) veterinarians on key federal teams; restructuring the National Veterinary Response Teams (NVRTs) by reestablishing a public/private partnership with the American Veterinary Medical Association; and establishing a working group to plan how to accomplish these recommendations and improve federal agency interaction.

VETERINARY DISASTER RESPONSE AT THE NATIONAL LEVEL

What role, if any, should the Department of Health and Human Services (DHHS) play regarding household pets and service animals in disaster response? Taking care of our human population includes efficiently and effectively addressing the multiple animal issues resulting from disaster situations: rescue, relocation, transportation, shelter, medical care, and reunion with owners.¹ The aftermath of multiple recent hurricanes has demonstrated that when pets are evacuated, pet owners will evacuate. The end result of which means lives are saved: both human *and* animal.

Owners must take primary responsibility for their animals in disaster situations. It is when owners are unable to care for and protect their animals that the local and state governments must step in and help. Along with private organizations, local and state responders are able to provide for the needs of these animals in the vast majority of disasters. It is in the large-scale, catastrophic and/or prolonged disasters, when critical infrastructures in the community are seriously affected, that the federal government may be called upon to help protect the safety and well-being of pets and livestock. The primary federal agency for supporting states in this effort is the U.S. Department of Agriculture's Animal Plant Health and Inspection Service (USDA/APHIS).^{2,3}

The DHHS has deployable veterinary disaster response units called National Veterinary Response Teams (NVRTs) which can provide support to animals in disaster with their expertise in veterinary medicine, public health, and research.⁴ Currently, there are multiple animal disaster response organizations, both private and public, already performing these missions. With so many capabilities present, is there a unique mission for the NVRTs? After extensive interviews and research, it is my conclusion that there is

a unique mission – it will simply call for some restructuring. Animals influence human health and veterinarians must be involved in decisions that involve animal care. I recommend DHHS do the following:

- Educate the public, healthcare providers, and disaster responders as to the importance of animals to human health
- Provide strategic level veterinary clinical and public health guidance by embedding U.S. Public Health Service (USPHS) veterinarians on key federal teams
- Restructure the NVRTs as part of a phased operation; reestablishing a public/private partnership with the American Veterinary Medical Association
- Establish a working group to plan how to accomplish these recommendations and improve federal agency interaction

The next two sections explore the current animal disaster response capabilities within the United States, while the final four sections address each of the above recommendations.

Animal Disaster Response Overview

In the past, the public has become outraged and blamed the government for the mishandling of pets in disasters such as Hurricane Andrew in Florida in 1992.⁵ Although thousands of animals were left homeless after this Category 5 hurricane, with many injured or killed and very few later reunited with owners, there were no changes in legislation established. There was however, a great deal of concern for the welfare of animals in future disasters. One outcome of this concern was the formation of animal

disaster response teams called Veterinary Medical Assistance Teams, or VMATs, under the American Veterinary Medical Association (AVMA).

Over the next several years there was varied success in animal disaster response. After Hurricane Floyd hit North Carolina in 1999, with an estimate of 2.9 million animals (pets and livestock) killed,⁶ the first State Animal Response Team (SART) was formed.⁷ Their goal was to develop an emergency plan that could help save animals affected by future disasters. Florida was much better prepared for Hurricane Charley in 2004, because after Hurricane Andrew they started extensive local animal disaster planning. Their preparation, which included educating the public on what to do with their animals in disasters, along with the presence of response organizations that included the VMATs and Disaster Animal Rescue Teams (DARTs) from the Humane Society of the United States (HSUS), culminated in fewer animal deaths and many more animals reunited with their owners.⁸

The most destructive hurricane to ever hit the United States was Hurricane Katrina in August 2005.⁹ As is common in disasters, many pet owners had refused to evacuate without their pets. Animals were not allowed on rescue boats or buses¹⁰ or in the shelters of last resort, and the end result was thousands of animals left behind.¹¹ In addition, there were thousands of grief stricken, frustrated, angry pet owners. It was in the aftermath of this hurricane that legislation dealing specifically with animals in disaster was finally passed: the Pets Evacuation and Transportation Standards Act of 2006, or the PETS Act.¹²

The PETS Act, an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, requires that local and state governments include

household pets and service animals in all phases of their emergency preparedness operational plans. The Federal Emergency Management Agency (FEMA) released a Disaster Assistance Policy in 2007 which identifies the pet evacuation and sheltering expenses that may be reimbursed to state and local governments after a major disaster or emergency is declared.¹³ At the federal level, the PETS Act allows the government, on direction of the President, to provide for the essential needs, including the rescue, care, and shelter, of owners of household pets and service animals, as well as the animals themselves.¹⁴ The Disaster Operation Directorate at FEMA is currently developing several federal guidance documents pertaining to evacuation which will include a section on pets.¹⁵

Another outcome of Hurricane Katrina was the formation of the National Animal Rescue and Sheltering Coalition (NARSC). This is a coalition of nine national animal welfare groups that wanted to coordinate a joint response in order to better help animals in disaster situations.¹⁶ After Katrina, the NARSC worked closely with the State of Louisiana to develop an evacuation plan that could better accommodate the needs of pet owners. During Hurricane Gustav in 2008, nearly all the NARSC partner organizations were deployed, and overall the plan worked very well.¹⁷ Special needs populations were evacuated and sheltered with their animals in colocated shelters (animal shelters located at same site as human shelters) around the state, with a final owner-pet reunification rate of 99%.¹⁸

In addition to the VMATs with the AVMA and the NVRTs with DHHS, there are veterinary personnel in the National Animal Health Emergency Response Corps (NAHERC) with the USDA¹⁹, The Office of Force Readiness and Deployment (OFRD)

with the U.S. Public Health Service (USPHS), and the Medical Reserve Corps.²⁰ At the state level there are State Animal Response Teams (SARTs) that join government and nonprofit agencies, veterinarians and volunteers to prepare for and respond to all types of animal emergency issues during disasters.²¹ The SARTs are non-profit and are able to accept donations in support of their work. The SARTs also sponsor County Animal Response Teams (CARTs), since most disaster response starts at the local level.²² Not all states and counties in the United States have these teams, but the numbers are growing. There are currently 19 active SARTs and five under development.²³ Most of the active teams are in states along the East and Gulf coasts. North Carolina, for example, has a SART and 94 of their 100 counties have either active or developing CARTs.²⁴

In addition to local and state governments, numerous international organizations (IOs), non-governmental organizations (NGOs), and private groups readily volunteer support to communities affected by disaster. There are multiple private organizations such as those in the NARSC, which include: the Humane Society of the United States (HSUS); the American Society for the Prevention of Cruelty to Animals (ASPCA); the American Humane Association (AHA); Best Friends Animal Society; Code 3 Associates; the International Fund for Animal Welfare (IFAW); the National Animal Control Association (NACA); and the United Animal Nations/Emergency Animal Rescue Services (UAN/EARS).²⁵

Every state in the nation, as well as the District of Columbia, the Virgin Islands, Puerto Rico and Guam, has signed into law what is called the Emergency Management Assistance Compact (EMAC).²⁶ The EMAC is an interstate mutual aid agreement used

during disasters to authorize and request needed resources. It does not replace the need for federal assistance, but rather works closely with FEMA to fill shortfalls, make maximum use of all available resources, and avoid duplication of effort.²⁷ Most importantly, EMAC allows the states to join forces and quickly and efficiently help one another in disasters.

The bottom line is that there are multiple capable animal disaster response organizations already in place at multiple levels across the United States; we cannot afford to have duplication of effort at the federal level.

Federal Level Disaster Response

The National Response Framework (NRF). The NRF is used to mobilize federal resources to augment the state and local response. The NRF (called the National Response Plan until March 22, 2008²⁸) “establishes a comprehensive, national, all-hazards approach to domestic incident response.”²⁹ It contains the guidance needed to enable all those responsible to prepare for a unified response to any disaster. The NRF expands upon the National Incident Management System (NIMS), which establishes a standard command and management structure and provides a unified approach for incident management.³⁰ This command structure is also called the Incident Command System (ICS) which was originally developed in the early 1970’s to address the problems that developed when multiple disaster responders tried to work together in responding to fast moving wildfires.³¹ A standardized incident management system had to be designed to allow for coordinated, successful response to every type of disaster. When the federal government is called upon to assist the state and local response, the federal assets fall under the local Incident Commander; they do not assume command.

The NRF outlines 15 Emergency Support Functions (ESFs). The ESFs group government and private sector capabilities to respond to domestic incidents with resources, services, and support.³² The 15 ESFs are the primary mechanism, at the operational level, to provide federal assistance to responding state, local, and tribal governments, and to federal departments and agencies.³³ Each of the ESFs has an annex in the NRF and has a lead federal agency identified as well as multiple support agencies. For any given incident, not all ESFs are necessarily activated and within an ESF, capabilities can be fully or partially employed.

There are four ESFs involved, to a greater or lesser extent, with animals. The following is a brief summary of the four ESFs and what each covers in regards to household pet and service animal management in disasters.

- ESF 6 (Mass Care, Emergency Assistance, Housing and Human Services): Ensures coordinated care for household pets and service animals during evacuation and sheltering.³⁴ Collaborates with and is supported by ESFs 8 and 11 to perform this mission.³⁵
- ESF 8 (Public Health and Medical Services): Provides assistance with veterinary and/or animal health issues, veterinary equipment and supplies³⁶, veterinary medical support to ESFs 6, 9, and 11³⁷, and veterinary medical effects resulting from all hazards.³⁸
- ESF 9 (Search and Rescue): Includes “veterinary support” to search and rescue from ESF 8/NDMS/DHHS.³⁹
- ESF 11 (Agriculture and Natural Resources): Focus is on agriculture and commercial animals (livestock, exhibit animals, research animals, and breeding

operations);⁴⁰ coordinates with ESF 8/DHHS to support animal-related issues during disasters;⁴¹ provides for the “safety and well-being of household pets” together with ESFs 6, 8, 9 and 14.^{42,43}

The Department of Health and Human Services is the lead agency for ESF-8, and a support agency for ESFs 6, 9, and 11.

DHHS supporting role in animal disaster response. The U.S. Department of Health and Human Services’ mission is to protect the health of all Americans. The agency provides essential medical, public health, and other human services to everyone, but in particular those who are not able to help themselves.⁴⁴ It is unclear how animals fit into this mission, but the reality is that there is a bond between humans and animals that is real and strong. In disaster situations this bond often becomes even stronger, and separating the person from the animal may in effect cause harm to the person’s physical and mental health.

The National Disaster Medical System (NDMS). The NDMS is a capability used by DHHS to meet its responsibilities under the National Response Framework. One of the functions of NDMS is to temporarily supplement the Nation’s medical response capabilities in major emergencies and federally declared disasters.⁴⁵ One of the components of the NDMS is patient movement out of a disaster site. But what happens if one of the patients being evacuated has a household pet? Service animals are accepted and required to be taken along with the human patients because of the Americans with Disabilities Act.⁴⁶ Household pets, however, may or may not be accepted.

What is the difference between “household pets” and service animals? According to the Federal Emergency Management Agency (FEMA), a Household Pet is:

A domesticated animal, such as a dog, cat, bird, rabbit, rodent, or turtle that is traditionally kept in the home for pleasure rather than for commercial purposes, can travel in commercial carriers, and be housed in temporary facilities. Household pets do not include reptiles (except turtles), amphibians, fish, insects/arachnids, farm animals (including horses), and animals kept for racing purposes.⁴⁷

Service animals are defined under the Americans with Disabilities Act (ADA) of 1990 as “any guide dog, signal dog, or other animal individually trained to provide assistance to an individual with a disability.”⁴⁸ The ADA does not further define the kinds of animals that may be included or what type of service they might perform. In addition, the ADA defines disability as a “physical or mental impairment that substantially limits one or more major life activities of such individual.”⁴⁹ These definitions do not rule out animals other than dogs, such as miniature horses for the blind, monkeys for the physically disabled, or cats for detecting seizures.

Since its inception, the National Disaster Medical System has been shuffled between federal agencies. It was originally created in 1984⁵⁰ under the Public Health Service in DHHS. In 2003 it was moved to the newly established Department of Homeland Security (DHS) as a result of the Homeland Security Act of 2002.⁵¹ Finally, in January 2007, NDMS was moved back under DHHS as directed by the Pandemic and All-Hazards Preparedness Act.⁵²

Veterinary disaster response assets were not added to the NDMS until 1993 when DHHS signed a Memorandum of Understanding (MOU) with the American Veterinary Medical Association (AVMA) regarding the Veterinary Medical Assistance Teams (VMATs).⁵³ The AVMA managed and trained the VMATs with funding provided

by the non-profit American Veterinary Medical Foundation (AVMF).⁵⁴ Since approximately 84% of all U.S. veterinarians are members of the AVMA,⁵⁵ the veterinary/animal care community was aware of the teams and their capabilities. States were comfortable working with the VMATs and called them during disasters,⁵⁶ keeping the teams active and therefore trained and experienced. The VMATs were successful in their missions and were considered a valuable national asset.⁵⁷

Under the National Response Plan (now the National Response Framework) there were four regionally focused VMATs which were the only officially recognized federal-level program providing veterinary treatment to animals in disaster.⁵⁸ One or more of the teams would be deployed under NDMS in the event of a disaster and would provide veterinary clinical care where needed. Volunteers during times of non-deployment, the team members became “federalized” upon deployment. This was important as they were then covered under the federal umbrella as far as credentialing, liability, salary, and benefits.

After Congress passed the Public Health, Security and Bioterrorism Preparedness and Response Act of 2002,⁵⁹ all NDMS team members wanting to remain with their teams had to become intermittent federal employees rather than remain temporary volunteers. The advantages of being an intermittent employee include protection under the Uniformed Services Employment and Reemployment Rights Act (USERRA)⁶⁰ and health insurance during activation. The disadvantages include rules on advertising, fund raising, and acceptance of gifts/donations, which the AVMA had previously used to provide funding for the teams. The Act also states that funding for the NDMS mission should be provided by DHHS, and it was at this time that the federal

government stopped accepting money from private entities for federal employees.⁶¹ For some team members, all the new rules simply put a damper on their volunteer spirit.

The VMATs continued to deploy while negotiations took place regarding the new law.⁶² The AVMA had trademarked the VMAT name in 1999,⁶³ so the government chose to use the name National Veterinary Response Team or NVRT for the new federal teams. In February 2008, the AVMA and DHHS signed an updated MOU outlining the differences between the VMATs and the NVRTs and identifying the functions of each in order to enable them to work together effectively in future disasters.⁶⁴

There are currently five VMATs which now focus at state level response.⁶⁵ States may request a VMAT during a disaster and the team will deploy for up to 72 hours at no cost to the State.⁶⁶ The NVRTs are a capability found within the Office of Preparedness and Emergency Operations (OPEO) under the Assistant Secretary for Preparedness and Response (ASPR).⁶⁷ When a State requests an NVRT, the State must be prepared to assume the cost share (generally 25%) of the total cost to deploy, support, and demobilize NVRT resources, as is the case with all federal level response assets deployed under a Stafford Act Declaration. FEMA, however, may choose to waive this charge.⁶⁸

Current federal resources. There are five NVRTs, each consisting of up to 28 private citizens with professional expertise in veterinary medicine and public health.⁶⁹ The NVRTs are the animal medicine equivalent of DHHS' Disaster Medical Assistance Teams (DMATs), rapid response teams designed to provide human medical care during a disaster.⁷⁰ The NVRTs are made up of veterinarians, animal health technicians, pharmacists, epidemiologists, safety officers, logisticians, communications specialists,

and other support personnel who train to respond to various disaster situations. Each team member must maintain all the necessary professional certifications and licensure of their discipline, which is then recognized by the state requesting NVRT assistance.⁷¹ The NVRTs work within the Incident Command System (ICS) therefore immediately fit into any disaster response situation.

The NVRTs are not the only asset available to the U.S. Department of Health and Human Services in responding to animal disaster situations. Individual veterinarians have been placed on other teams such as the Rapid Deployment Forces (RDFs) which staff Federal Medical Stations.⁷² The U.S. Public Health Service Commissioned Corps (USPHS) falls under DHHS and has nearly 100 veterinarians. Many work within DHHS at the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and the National Institutes of Health (NIH). There are USPHS veterinarians assigned to other agencies as well, including the USDA, the Environmental Protection Agency (EPA) and the State Department.⁷³

The balance of this paper outlines four recommendations whereby DHHS could more effectively use available assets to assume a more prominent role in animal disaster response.

Educate the Public, Healthcare Providers, and Disaster Responders as to the Importance of Animals to Human Health

The fact that there are NVRTs at all helps serve as a reminder to the national disaster planning infrastructure that there are animal issues that must be dealt with.⁷⁴

A survey conducted by the American Veterinary Medical Association (AVMA) in 2006 counted more than 72 million pet dogs and nearly 82 million pet cats in the United

States.⁷⁵ Over 60% of American households have pets, and of these households, nearly half (49.7%) consider their pet(s) to be family members.⁷⁶

The emotional and physical attachment many feel for their pets is referred to as the human-animal bond. This bond is officially recognized by the AVMA, which defines it as the “mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors that are essential to the health and well-being of both.”⁷⁷ In recent years, the behavioral health community has begun to recognize the importance the human-animal bond plays in overall human health such as decreasing stress and blood pressure, and improving mental well-being.⁷⁸

The best-case scenario in a large-scale disaster is pet owners evacuating with their pet(s). Keeping the pet with the family improves the well-being of the pet⁷⁹ and the owners. When separated from their pets, especially when it is involuntarily, many people suffer from grief, overwhelming guilt, and anger.⁸⁰ These same emotions may also detrimentally affect the mental health of rescue workers,⁸¹ who may be worried about their own pets in addition to those they might rescue or have to leave behind. In addition, even if people agree to evacuate without their pet(s), often they will later risk their lives (and therefore the lives of rescue personnel) to return to the site to try to save their pet.⁸² The relevance of this bond applies not only to household pets but also to other animals including horses and livestock.⁸³

Unfortunately, many people choose not to evacuate a disaster zone for reasons including, but not limited to: too many pets, lack of pet carrier(s), transportation not allowing pets, and/or shelters not accepting pets. According to a Fritz Institute survey, 42% of the affected population chose not to evacuate during Hurricane Katrina; of those

remaining behind, 44% stated it was because they did not want to leave their pets.⁸⁴ Not evacuating puts everyone at risk: the owner and pet, the rescue workers, and even the general public.⁸⁵

Michael Leavitt, Secretary of DHHS from January 2005 to January 2009, said recently that “Veterinary Medicine is a very powerful diplomatic tool.”⁸⁶ This statement is true whether the discussion relates to foreign diplomacy or the animal-owning public here in the United States. Unfortunately there are those in the general public who feel the government is either unwilling or unable to feel compassion. An article in the “Doggie News” just after Hurricane Katrina discussed why they felt the PETS Act would never work: “Moreover, government doesn't have the *heart* [emphasis in original] to provide aid. Only people have hearts. Government is just a collective body of elected and appointed officials.”⁸⁷ Assuring the public that their pets will be cared for, and following through with that promise, will result in more favorable public opinion regarding the federal government. While the public's favorable opinion should not be the primary reason for taking care of the animals, it will be a natural and very positive outcome.

The DHHS must play a more prominent role in promoting the education of pet evacuation issues to the general public, healthcare providers, and disaster responders. FEMA has started this education with official training courses entitled “Animals in Disaster” which are offered through its Independent Study Program online.⁸⁸ All DHHS employees involved in disaster response should be required to take these short, informative courses.

Numerous, excellent websites exist already with information for the public on disaster preparedness for their pets including AVMA,⁸⁹ FEMA,⁹⁰ HSUS,⁹¹ and the CDC⁹²

just to name a few. DHHS has several websites discussing ways for adults suffering from depression⁹³ and children dealing with stress⁹⁴ to cope after having been involved in a traumatic event. Including animal information on these websites, even helpful links to already existing websites, would be very beneficial to pet owners. Keeping their pet with them before, during and after a disaster would give owners a source of comfort and relieve a great deal of their anxiety.

Preparedness information is available to those who look for it; however a series of public service announcements, perhaps originating from the ASPR/DHHS Public Information Office, would be of enormous benefit. Other offices under which this task could easily fall include the Substance Abuse and Mental Health Services Administration (SAMHSA) or the Administration for Children and Families (ACF) whose responsibilities include addressing the multiple psychological and social aspects of coping with traumatic events,⁹⁵ and promoting the social well-being of children and families,⁹⁶ respectively. The SAMHSA already has multiple resources available in this area which could easily include animal information.

In the fall of 2008, during the hurricane season, several television channels, including The Weather Channel, did short informative clips on evacuating from disasters with the family pet. This is the type of format that really raises the awareness of the general public, especially when aired between stories covering a current disaster, such as an approaching hurricane. FEMA developed a DVD series on planning for the evacuation and sheltering of animals, in a joint project between the Department of the Army and the Department of Homeland Security.⁹⁷ These DVDs are informative, interesting, and are available on the FEMA website.⁹⁸ The “Animals in Emergencies:

What Owners Need to Know” DVD could be shown on television, or perhaps used as an educational tool in public schools. Several organizations and states have designated different days as their local “Animal Disaster Preparedness Day,” but nothing has yet been formalized on a national level. There are multiple national pet holidays,⁹⁹ and an official national day might be designated to coincide with one of them: National Pet Week (1st week of May), Responsible Pet Owners Month (February), or National Pet Identification Week (April 18-24). Or perhaps a promotion could be included on an already established holiday such as National Pet Day (April 10).

In working toward educating the public, DHHS should stress the importance of planning ahead, not only for owners of service animals and household pets, but also for owners of animals that do not fall within these definitions. The government will not be able to help support these other animals (e.g., reptiles, fish, pot-bellied pigs), and their owners must take responsibility for making other arrangements.

Provide Strategic Level Veterinary Clinical and Public Health Guidance by Embedding U.S. Public Health Service Veterinarians on Key Federal Teams

Despite the available federal assets, recent large-scale disasters have shown that in general, the nation is not well prepared to handle resulting animal issues.¹⁰⁰ For multiple reasons already discussed, many pet owners do not evacuate in a disaster, and when a state is overwhelmed, the federal government needs to step in and assist.

It may be worthwhile to have a small “veterinary module” added to other teams to look at public health and animal disease issues.¹⁰¹ Within ESF 8 public health functions, veterinary medical officers could provide public health response management and leadership on the Incident Response Coordination Teams (IRCTs).¹⁰² The IRCTs are

mobilized by the Assistant Secretary for Preparedness and Response at DHHS, and it is the teams' responsibility to coordinate all assets deployed under ESF 8.¹⁰³ Placing a veterinarian in an on-site IRCT, deployed in advance of a hurricane, for example, would provide visibility and early warning regarding animal response issues. That veterinarian could also perform a critical mission by acting as a central point of contact/liaison for all the incoming animal response teams. Veterinarians could provide the same services on the Applied Public Health Teams (APHTs).¹⁰⁴ The APHTs are deployable public health departments under the USPHS that assist communities in standing up their infrastructure after disasters. These teams can be pre-deployed or go out during mitigation or recovery phases.¹⁰⁵

Under ESF 8 there are multiple pre-scripted mission assignments (PSMAs) outlined for DHHS from FEMA.¹⁰⁶ The PSMAs are work orders for supplies and services that are written out and agreed upon by involved agencies beforehand in order to speed up response times.¹⁰⁷

When a State needs assistance, a request is sent to FEMA. FEMA then decides which support agency best meets the mission requirements, assigns the mission to that agency, and provides the necessary funding. If the mission is assigned to DHHS, then DHHS must determine how to go about meeting that mission.

The DHHS does have PSMAs in place for veterinary medical and public health support. Up to six two-person veterinary surveillance teams may be deployed to make recommendations and assist ESF-6 and ESF-11 authorities with existing animal clinics and temporary shelters. There are also up to six two-person veterinary public health surveillance teams that look at various measures including morbidity and mortality of

service animals and household pets and make recommendations to the Incident Command as far as mitigation and treatment.¹⁰⁸

There are opportunities to place veterinarians in other areas within DHHS. Under ESF 8, it would be beneficial to have veterinary expertise at the DHHS Secretary's Operation Center (SOC) during a disaster,¹⁰⁹ perhaps as a member of the Emergency Management Group (EMG).¹¹⁰ Veterinary expertise would be beneficial in surveillance and monitoring during non-response times as well, participating in disaster response planning and anticipating many potential animal-related issues. USPHS veterinarians have been placed as liaisons in multi-agency Joint Field Offices in the past, where they were able to interact with field commanders, local public health and medical officials, and function as liaisons back to DHHS.¹¹¹

One of the gaps in current animal disaster management is in data collection and analysis.¹¹² Although ESF 8 continually acquires and evaluates information during an incident, there is minimal animal-related data gathering. Relevant information would include: the number of pet owners who died because they refused to evacuate without their pets, the number of responders injured rescuing individuals who had refused to leave their pets or the amount of money spent rescuing the pet owners who stayed behind.

Having a veterinarian stationed in the EMG and the IRCT and getting pertinent, pet-related questions inserted into already existing data gathering would provide invaluable data that could then be used to further educate healthcare providers, government officials, and the public as to the importance and value of caring for household pets. There is also a need for determining which data points should be

collected so that proper analysis can be performed in disaster incidents. Proper analysis is critical to immediate situational awareness and ongoing improvement in disaster response.

Under ESF 6 (Mass Care, Emergency Assistance, Housing and Human Services), veterinary expertise would be a valuable asset for the shelter teams.¹¹³ Veterinarians should work with ESF 6 on issues/scenarios involving animal care as related to mass care situations/infrastructure.¹¹⁴ Many sheltering issues are expertly handled at the state and local levels; however, adding a veterinarian to the ESF 6 teams working in the shelters would facilitate first hand monitoring of issues involved with special needs evacuees, co-located human and animal shelters, and public health issues.

The Federal Emergency Management Agency (FEMA) has 28 Urban Search and Rescue Task Forces in the U.S., each of which has multiple response personnel, including canine/handler search and rescue teams.^{115,116} The mission of these teams is to help state and local responders locate and rescue victims. The canines are trained to detect human scent in various situations, including disasters such as tornadoes, hurricanes, earthquakes and even avalanches,¹¹⁷ and are of incalculable value in finding victims. These animals are hard-working and so devoted to their mission that they must be closely monitored to ensure they remain in optimal health. Each Task Force has an Incident Support Team (IST) whose purpose is to help the Task Force accomplish its mission.¹¹⁸ Currently these Incident Support Teams have embedded veterinarians who provide advice to the team leader and arrange for necessary veterinary services.¹¹⁹ DHHS could facilitate this mission by sending additional veterinary support, including

equipment, so that the IST would have on-site care readily available to their canine teams.

Restructure the NVRTs as Part of a Phased Operation; Reestablishing a Public/Private Partnership with the American Veterinary Medical Association

There are multiple areas of concern involving the NVRTs; currently they are “like a plant in desperate need of water, food, and fertilizer.”¹²⁰

I believe the solution regarding proper usage of the NVRTs is reestablishing the link between DHHS and the AVMA, agreeing to a phased operation using the VMATs and the NVRTs. The VMATs would become the first responders, covering the mission for the first 72 hours. If continued animal care was needed, the VMATs would remain in place and “convert” to NVRTs, allowing them to stay up to two weeks. I will elaborate on this idea in this section.

Mission. The Office of Preparedness and Emergency Operations within DHHS sees the NVRT as being able to perform the following three missions under ESF 8.¹²¹

- Support animal care (as requested under ESFs 6, 9, and 11)
- Animal public health
- Care for primates/research animals

The NVRTs are a deployable veterinary resource under ESF 8; and as described earlier provide support to ESFs 6, 9 and 11.¹²² The NVRTs were designed:

to provide assistance in identifying the need for veterinary services following major disasters, emergencies, public health or other events requiring Federal support and in assessing the extent of disruption to animal and public health infrastructures.¹²³

Under NDMS, the NVRT does not have specific animal rescue, transportation/relocation, or sheltering missions. But they can support all these missions by providing

medical evaluations/screenings, veterinary medical care, and disease control recommendations at any or all stages of the process.¹²⁴

There is definitely an animal disaster response mission that the NVRTs could participate in; however, as already discussed there are multiple other organizations and individuals available that are capable of performing the same mission.

Personnel. The VMATs still exist, but now focus at the state level.¹²⁵ Personnel on the NVRTs are usually the same as those on the VMATs. Currently, four of the NVRT teams are also VMAT teams, so where is the potential benefit? This seems to be a duplication of effort. The pool of volunteers is only so big and many who want to serve are already serving somewhere. Many of these team members are also on state and local level teams;¹²⁶ and some volunteer with non-governmental organizations. Pulling individuals to work at the federal level often takes those individuals away from all of these other disaster response efforts. In addition, the professionals on the federal teams have not been adequately trained and used properly in order to keep them from leaving and going somewhere else where they will be used.¹²⁷

Equipment. The NVRT equipment cache is stored in a FEMA distribution center (warehouse) in Frederick, Maryland, and at the time of disaster is moved by the federal government to meet up with the team. At the time of this writing, the cache is scheduled to be rehabbed; however there is no funding available.¹²⁸ The equipment originated as a DMAT cache with veterinary specific equipment added in. It is in need of extensive re-working, which should start with the identification of the NVRT mission. Once the mission(s) is clear, supporting equipment sets can be developed.¹²⁹

When the teams fell under the AVMA, it was the AVMA's responsibility to fund and train them. The AVMA maintained all the supplies and equipment, much of which came to them through donations from various sources from states to private companies. With the overriding goal being to get the job done, all donations were accepted; something the government looks at as a potential conflict of interest. However, if a formal public/private partnership was set up, the issue of donations could be resolved. An example of making this work is the public/private partnership between the Red Cross and the federal government. The Red Cross, unlike the federal government, is able to accept donations. The Red Cross in turn uses the donations to provide a service to the federal government. In this case, donations could go to the nonprofit American Veterinary Medical Foundation (AVMF),¹³⁰ the AVMA could use the donations for the VMATs, and then the VMATs could provide a service to DHHS.

Deployments. Within NDMS, the NVRTs have been set up as a standalone resource of up to 28 people, capable of deploying for up to two weeks. They are not a subset of the DMATs.¹³¹ Sending out a large team is costly; sending out individuals or perhaps tailored teams to support ESFs 6, 9, and/or 11 would greatly lower costs and offer more flexibility.

The VMATs are capable of deploying quickly to an affected area and will operate 72 hours on the ground at no cost to the States. Many of the personnel in the VMATs are the same as the NVRT. A possible solution to the personnel issue might be a phased operation: VMATs cover first 72 hours; if needed longer at the disaster site, the VMAT is activated under the NDMS and switched to federal status (NVRT mode) enabling it to stay up to two weeks. That way the States would get the first 72 hours free

and then would have to be prepared to cover 25% of the NVRT cost for next 11 days. The personnel and equipment could remain exactly as is, since only the name of the team would change.

Communication. There has been a lack of communication as to what the NVRT is going to be and do.¹³² The veterinary personnel who would fill the NVRTs have not been actively engaged in the recent past. These individuals are action oriented; they get impatient and start looking around and moving to organizations that will actively employ them in disaster response.¹³³

Members of the NVRTs feel that they need a strong advocate in DHHS to improve visibility and communication.¹³⁴ There have been no regular meetings or teleconference-type opportunities where NVRT Commanders could share ideas, issues, or initiatives and feel like part of the DHHS team.

The NVRTs should be linked more strongly with the ten DHHS Regional Emergency Coordinators (RECs) in order to enhance visibility and therefore use of the teams.¹³⁵ The RECs work closely with state and local officials, monitoring local concerns and relaying information up to the operation center at the Office of the Assistant Secretary of Preparedness and Response (ASPR).¹³⁶ As stated earlier, having a veterinarian in the Emergency Management Group (EMG) would greatly assist in picking up and addressing any possible animal-related questions early. Since the RECs lead and train the Secretary's Incident Response Coordination Teams (IRCTs), they are the command and control element of the DHHS response, and the first responders in emergencies. Working closely with the NVRTs would give these RECs early guidance and assistance with any animal issues that may develop.

Another possibility for the NVRTs is that they be transferred to the USDA. What is the real difference between the NVRTs and the USDA response teams under ESF 11? The NVRTs focus on small animal response and the USDA teams focus on agricultural animals and issues; however many team members have the necessary skills to function on either team.¹³⁷ The teams could be placed under the same ESF lead (ESF 11) in order to decrease confusion.

Public-Private Partnerships. A Public-Private Partnership is just what its name implies: a partnership between a federal, state, or local (public) agency and a private organization or entity. The partnership is an actual contractual agreement, with each entity sharing skills and assets in order to deliver a service for the general public.¹³⁸ The National Council for Public-Private Partnerships wrote an open letter to then President-Elect Obama on December 3, 2008.¹³⁹ In the letter they recommended the new President look closely at the potential value of these partnerships as far as making the most out of the taxpayers' money. With the economic problems the nation is currently facing, this is the perfect time to look to alternative strategies and basically stretch the budget.

Could DHHS benefit by partnering with private organizations such as AVMA or the HSUS? The answer is yes. Not only would this reduce costs for the government, it would allow greater training opportunities for team members, improve interoperability of the various teams, speed up response times, and stabilize deployed personnel – a win-win situation for everyone.

These private organizations are large enough and experienced enough to be a stable resource for DHHS. Both are leaders in animal disaster management, and having

long ago adopted the National Incident Management System's (NIMS) Incident Command System (ICS), fit easily into local, state, and federal level response efforts. They would not be the first, or the only such public/private partnership. The American Red Cross has arguably the most well-known such partnership with the U.S. Government and has been conducting emergency response since its founding in 1881.¹⁴⁰ Another example is the National Voluntary Organizations Active in Disaster (NVOAD) which was partnered with the Citizen Corps in 2003, under the direction of FEMA.¹⁴¹ The NVOAD was originally founded in 1970 after Hurricane Camille hit the Gulf Coast causing immense destruction and many challenges to the multiple non-profit groups that responded to the disaster. With the goal of promoting "cooperation, communication, coordination, and collaboration"¹⁴² among the non-profit disaster response groups, this organization now has 49 national-level member organizations and 55 State/Territory VOADs.¹⁴³ DHHS could help coordinate an animal version of NVOAD with existing private animal disaster response organizations, building on what the NARSC began after Hurricane Katrina: helping communities through the disaster cycle by sharing skills and resources.

The USDA already has multiple successful public/private partnerships that are essential to their emergency management program, including: the AVMA; the United States Animal Health Association (USAHA); the National Alliance of State Animal and Agricultural Emergency Programs (NASAAEP); the National Association of County and City Health Officials (NACCHO); the National Association of State Departments of Agriculture (NASDA); and the National Assembly of State Animal Health Officials (NASAHO).¹⁴⁴

Both the AVMA and the Humane Society of the United States (HSUS) have Memorandums of Understanding (MOU) with the USDA's Animal and Plant Health Inspection Service (APHIS) to coordinate animal disaster preparedness and response. In addition, the HSUS has a similar MOU with the American Red Cross and a close working relationship with the FEMA.¹⁴⁵ These public/private partnerships allow for information exchange, training exercises, and collaboration on procedures and equipment with everyone benefiting.¹⁴⁶

Are these organizations willing to look at partnering with DHHS? The AVMA would "welcome the opportunity to explore further partnerships with DHHS."¹⁴⁷ During President Obama's Inauguration on January 20, 2009, HSUS partnered informally with the Assistant Secretary of Preparedness and Response (ASPR) at DHHS,¹⁴⁸ agreeing to have HSUS Foot Patrols check in regularly at the NDMS First Aid Tents to offer assistance with any animal-related incidents. Although no incidents occurred during the event, it was a valuable exercise with excellent collaboration between the organizations.^{149,150} HSUS would welcome a formal partnership with DHHS.¹⁵¹

Establish a Working Group to Plan How to Accomplish These Recommendations and Improve Federal Agency Interaction

There are so many animal disaster response capabilities in the United States, that they cannot just all be left out there to respond as they deem appropriate. There needs to be a "logical collective framework put in place that can respond in a tiered, efficient manner."¹⁵²

There are numerous potential missions that could be supported by veterinary assets within DHHS, including help with on-scene care and guidance immediately after

a disaster, information/data collection at the scene, analysis of support needs, coordinating requests for veterinary medical or public health assistance, and even relief to local response workers caring for pets.

A working group consisting of representatives from NDMS/DHHS and AVMA should meet and determine how to go about reestablishing a public-private partnership. As discussed above, the VMATs would be the first responders, converting to NVRTs and remaining in place if support was needed beyond the first 72 hours. The 2008 MOU between DHHS and AVMA could be reworked to more closely resemble the original 1993 MOU adding the new phased operation concept. This working group could also determine if any other organizations should be involved in the partnership. Rather than DHHS having multiple MOUs with various organizations, it may be more beneficial to have one MOU with AVMA and then recommend AVMA establish additional MOUs, for example with HSUS.

Once the partnership between DHHS and AVMA is reestablished, another working group with representatives from all the involved response organizations (e.g., DHHS, USPHS, USDA, DHS/FEMA, States, AVMA, NARSC, DOD, humane organizations) should be brought together to help identify future challenges and opportunities.¹⁵³ This meeting could be initiated and coordinated by a liaison in NDMS and could take place at a regularly scheduled conference where most of the concerned parties already meet (e.g., HSUS's Animal Care EXPO; the National Alliance of State Animal and Agricultural Emergency Programs [NASAAEP]; the annual July AVMA conference).¹⁵⁴

One of the questions this working group should address is whether it would be beneficial to request a stand-alone Animal Annex be added to the National Response Framework (NRF). An initial draft of such an annex was written by the National Response Plan Animals Working Group in January 2007, but was not accepted in the new NRF.¹⁵⁵ At the time the guidance from the Steering Committee was that no new documents (such as new ESFs or new Annexes) could be added, only modifications to or rewrites of existing documents.¹⁵⁶ Instead, animal disaster management and veterinary service requirements were placed in several ESFs as described in this paper. In a memo to then Secretary Michael Chertoff, U.S. Department of Homeland Security on June 10, 2008, the AVMA officially requested that DHS reconsider this omission. The AVMA believes that a pet and service animal annex would greatly assist responders by clarifying roles and enhancing coordination.¹⁵⁷ Taking care of animals in disasters is a necessity; this was solidified by the PETS Act in 2006. A separate annex that clearly lays out policies, capabilities, actions and responsibilities for all involved could be invaluable to the response effort.

A recently organized DHHS veterinary working group is writing the ESF 8 Veterinary Concept of Operations (CONOPs). The draft defines the mission of the ESF 8 veterinary program, the command structure, local and state support, performance classes and objectives, scope of operations, capabilities, and key definitions. This Veterinary CONOPs discusses the NVRT mission and could easily incorporate the VMAT as the first responders. Once completed, the document will complement the DHHS CONOPs for Public Health and Medical Emergencies, providing critical guidance for all involved in the disaster response.

Memorandums of Understanding (MOUs) could be written between DHHS and multiple other agencies including FEMA and USDA. These MOUs would establish roles for each of the agencies and identify all the sub-tasks required for coordinated animal disaster response. When inter-agency MOUs are considered, however, funding issues must be addressed. If an MOU is written between two Federal agencies, then the funding comes from those two agencies. This compares to being assigned a mission from FEMA and having the funding covered by FEMA under the Disaster Relief Fund provided to them through the Stafford Act.¹⁵⁸

Conclusion

This paper discussed the evolution of animal disaster response capabilities in the United States and proposed four recommendations whereby DHHS could assume a more prominent role in this response:

- Educate the public, healthcare providers, and disaster responders as to the importance of animals to human health is essential. It starts with owners being educated in what to do with their animals during disasters and continues with healthcare providers understanding how the human-animal bond affects both the physical and emotional health of the disaster victims. Responders must also be trained so they are prepared to deal with both the animals and their owners.
- Provide strategic level veterinary clinical and public health guidance by embedding U.S. Public Health Service (USPHS) veterinarians on key federal teams. Stationing federal veterinarians in key locations, especially during disasters, would provide immediate situational awareness of public health and animal disease issues. Surveillance and monitoring during non-response times

including participating in disaster response planning will result in ongoing improvement in disaster response capabilities.

- In the interest of providing maximum support when called upon by local and state governments, the Department of Health and Human Services should restructure the NVRTs as a phased operation in conjunction with the VMATs. Reestablishing the public/private partnership with the American Veterinary Medical Association would reduce costs for the government, increase training opportunities, improve interoperability, and stabilize deployed personnel, the result of which would be improved service to the American public.
- Establish a working group to plan how to accomplish these recommendations and improve federal agency interaction. It is essential that all parties involved, to include federal, state, local, and private organizations, meet in order to determine how they can best work together in caring for the American public and the animals who mean so much to them.

By endorsing these recommendations, DHHS will demonstrate that it recognizes the importance and the relevance of the human-animal bond in relation to human health, and that it has compassion for animals and their owners.

Endnotes

¹ United States Animal Health Association, "Report of the Committee on Government Relations, 2006," <http://www.usaha.org/committees/reports/2006/report-gr-2006.pdf> (accessed December 18, 2008).

² Kevin M. Dennison, DVM, Emergency Program Manager, USDA APHIS Animal Care - Western Region, email message to author, February 4, 2009.

³ U.S. Department of Agriculture, Emergency Preparedness and Response, *Pet Evacuation and Shelter*, http://www.aphis.usda.gov/emergency_response/pet.shtml (accessed February 18, 2009).

⁴ DHHS, National Veterinary Response Team (NVRT), <http://www.hhs.gov/aspr/oepo/ndms/teams/vmat.html> (accessed February 4, 2009).

⁵ Andrew S. Edmonds and Susan L. Cutter, "Planning for Pet Evacuations during Disasters," *Journal of Homeland Security and Emergency Management*, Vol 5, Issue 1, Article 33 (2008), 1.

⁶ North Carolina Floodplain Mapping Program, Summary, http://www.ncfloodmaps.com/flood_data.htm (accessed February 6, 2009).

⁷ NC State Animal Response Team, Press Releases, "American Kennel Club Donates Funds for Emergency Pet Sheltering," http://sartusa.org/news-events/press_releases/72 (accessed February 6, 2009).

⁸ Leslie Irvine, Providing for Pets during Disasters: An Exploratory Study (2004), <http://www.colorado.edu/hazards/research/qr/qr171/qr171.html> (accessed February 3, 2009).

⁹ National Oceanic and Atmospheric Administration, U.S. Department of Commerce, "Hurricane Katrina – Most Destructive Hurricane ever to Strike the U.S.," <http://www.katrina.noaa.gov/> (accessed February 6, 2009).

¹⁰ Maryann Mott, National Geographic News, "Gustav Pet Evacuations Show Katrina Lessons Learned," September 2, 2008, <http://news.nationalgeographic.com/news/2008/09/080902-gustav-pets.html> (accessed February 3, 2009).

¹¹ Edmonds and Cutter, "Planning for Pet Evacuations during Disasters," 1.

¹² Pets Evacuation and Transportation Standards Act of 2006, Public Law 109-308, 109th Cong., 2nd sess. (October 6, 2006).

¹³ Federal Emergency Management Agency (FEMA), Eligible Costs Related to Pet Evacuations and Sheltering, Disaster Assistance Policy 9523.19, (October 24, 2007), http://www.fema.gov/government/grant/pa/9523_19.shtm (accessed February 5, 2009).

¹⁴ FEMA, Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) as amended, (June 2007), http://www.fema.gov/pdf/about/stafford_act.pdf (accessed February 3, 2009), 27-28.

¹⁵ Lisa Maddry, Disaster Operations Directorate, FEMA, email message to author, February 4, 2009.

¹⁶ The Humane Society of the United States (HSUS) Homepage, *How Katrina Galvanized Disaster Response in Animals*, August 27, 2007, http://www.hsus.org/hsus_field/hsus_disaster_center/disasters_press_room/katrina_anniversary/katrina_disaster_services.html (accessed December 31, 2008).

¹⁷ Debrah Schnackenberg, Vice President, Animal Protection Division; Director, Animal Emergency Services; American Humane Association, email message to author, February 3, 2009.

¹⁸ Ibid.

¹⁹ Katie Burns, "Veterinary Response Teams Offer Opportunities to Volunteer," *JAVMA*, Vol 233, No. 12 (December 15, 2008).

²⁰ Office of the Civilian Volunteer Medical Reserve Corps Homepage, <http://www.medicalreservecorps.gov/HomePage> (accessed December 31, 2008).

²¹ NC State Animal Response Team Homepage, <http://nc.sartusa.org/> (accessed February 5, 2009).

²² State Animal Response Team (SART) and PetSmart Charities, Inc., "Statewide Emergency Preparedness Initiative Request for State Participation," http://www.sartusa.org/docs/PETsMART_RFP2006.pdf (accessed February 5, 2009).

²³ NC State Animal Response Team Homepage, SART States, <http://sartusa.org/states/states.php>, (accessed February 6, 2009).

²⁴ NC State Animal Response Team Homepage, Counties, <http://nc.sartusa.org/counties/> (accessed February 5, 2009).

²⁵ HSUS, "How Katrina Galvanized Disaster Response for Animals."

²⁶ EMAC Homepage, What is EMAC?, <http://www.emacweb.org/?9> (accessed December 31, 2008).

²⁷ Leon Shaifer, EMAC Senior Advisor, National Emergency Management Association, email message to author, January 13, 2009.

²⁸ Department of Homeland Security (DHS), http://www.dhs.gov/xprepresp/committees/editorial_0566.shtm (accessed October 24, 2008).

²⁹ DHS, FEMA, *National Response Framework Resource Center*, <http://www.fema.gov/emergency/nrf/aboutNRF.htm> (February 18, 2009).

³⁰ FEMA, <http://www.fema.gov/emergency/nims/AboutNIMS.shtm> (accessed January 28, 2009).

³¹ National Response Team, *Incident Command System/Unified Command (ICS/UC) Technical Assistance Document*, (March 19, 2000), [http://www.nrt.org/Production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/SA-52ICSUCTA/\\$File/ICSUCTA.pdf?OpenElement](http://www.nrt.org/Production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/SA-52ICSUCTA/$File/ICSUCTA.pdf?OpenElement) (accessed November 26, 2008), 10.

³² National Response Framework (NRF), (January 2008), <http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf> (accessed February 18, 2009), 29.

³³ Ibid, 57.

³⁴ NRF, *ESF#6 – Mass Care, Emergency Assistance, Housing, and Human Services Annex*, (January 2008), <http://www.fema.gov/pdf/emergency/nrf/nrf-esf-06.pdf> (accessed February 18, 2009), 6-7.

³⁵ Ibid.

³⁶ NRF, *ESF#8 – Public Health and Medical Services*, (January 2008), <http://www.fema.gov/pdf/emergency/nrf/nrf-esf-08.pdf> (accessed February 18, 2009), 8-1.

³⁷ Ibid, 8-8.

³⁸ Ibid, 8-6.

³⁹ NRF, *ESF#9 – Urban Search and Rescue Annex*, (January 2008), <http://www.fema.gov/pdf/emergency/nrf/nrf-esf-09.pdf> (accessed February 18, 2009), 9-7.

⁴⁰ Dr. Jeannie Linn, DVM, Animal Care National Emergency Programs Manager, USDA/APHIS, email message to author, December 18, 2008.

⁴¹ NRF, *ESF#11 – Agriculture and Natural Resources Annex*, (January 2008), <http://www.fema.gov/pdf/emergency/nrf/nrf-esf-11.pdf>, (accessed February 18, 2009), 11-1.

⁴² Ibid.

⁴³ NRF, *ESF#14 – Long-Term Community Recovery Annex*, (January 2008), <http://www.fema.gov/pdf/emergency/nrf/nrf-esf-14.pdf> (accessed February 18, 2009), 14-1.

⁴⁴ DHHS, *HHS: What We Do*, <http://www.hhs.gov/about/whatwedo.html/> accessed January 18, 2009.

⁴⁵ DHHS, <http://www.hhs.gov/aspr/oepo/ndms/index.html> (accessed November 21, 2008).

⁴⁶ Department of Justice, Americans with Disabilities Act (ADA), <http://www.ada.gov/animal.htm> (accessed November 21, 2008).

⁴⁷ FEMA Disaster Assistance Policy, DAP9523.19, "Eligible Costs Related to Pet Evacuation and Sheltering," October 24, 2007, 1.

⁴⁸ Department of Justice, Americans with Disabilities Act (ADA).

⁴⁹ Sarah Price, ESQ, "Service Animals Under the ADA," September 2006, http://www.equipforequality.org/resourcecenter/ada_serviceanimals.pdf (accessed November 21, 2008).

⁵⁰ "National Disaster Medical System," briefing slides, Transforming Strategy into Action, 2007 Military Health System (MHS) Conference, www.tricare.mil/conferences/2007/Mon/M108a.ppt (accessed January 1, 2008).

⁵¹ Homeland Security Act of 2002, Public Law 107-296, 107th Cong., 2nd sess. (November 25, 2002).

⁵² Pandemic and All-Hazards Preparedness Act, Public Law 109-417, 109th Cong., 2nd sess. (December 19, 2006).

⁵³ Katie Burns, "A New Understanding for Handling Disaster," *JAVMA*, Vol 232, No. 7 (April 1, 2008), http://www.avma.org/onlnews/javma/apr08/080401a_pp978-980.pdf (accessed December 31, 2008).

⁵⁴ American Veterinary Medical Foundation, <http://www.avmf.org/index.php?submenu=DisasterRelief&src=gendocs&ref=DisasterRelief&category=WhatWeDo> (accessed December 18, 2008).

⁵⁵ Heather Case, DVM, MPH, DACVPM, Coordinator of Emergency Preparedness and Response for the American Veterinary Medical Association, email message to author, January 28, 2009.

⁵⁶ CAPT Stephanie Ostrowski, DVM, U.S. Public Health Service, interview by author, Washington D.C., November 5, 2008.

⁵⁷ Mr. Oliver Davidson, Senior Advisor, Emergency Services, HSUS, interview by author, Gaithersburg, MD, November 25, 2008.

⁵⁸ R. Scott Noler, Federal Veterinary Team Deployed Post-Rita Raises Questions, *JAVMA*, November 15, 2005, <http://www.avma.org/onlnews/javma/nov05/051115a.asp> (accessed December 31, 2008).

⁵⁹ Public Health, Security and Bioterrorism Preparedness and Response Act of 2002, Public Law 107-188, 107th Cong., 2nd sess. (June 12, 2002).

⁶⁰ U.S. Office of Special Counsel, Uniformed Services Employment and Reemployment Rights Act, <http://www.osc.gov/userra.htm> (accessed on January 14, 2009).

⁶¹ Reference: Jennifer Fiala, "The New Face of Disaster Response," *DVM Magazine*, December 1, 2007, <http://veterinarynews.dvm360.com/dvm/article/articleDetail.jsp?id=479026&pageID=1&sk=&date=> (accessed January 1, 2009).

⁶² Ibid.

⁶³ Case, January 13, 2009.

⁶⁴ "Memorandum of Understanding Between the Department of Health and Human Services and The American Veterinary Medical Association," signed February 2008.

⁶⁵ Veterinary Medical Assistance Teams Homepage, <http://www.vmat.org/> (accessed February 12, 2009).

⁶⁶ Case, January 28, 2009.

⁶⁷ U.S. Department of Health and Human Services, National Veterinary Response Team (NVRT), <http://www.hhs.gov/aspr/oepo/ndms/teams/vmat.html> (accessed January 1, 2009).

⁶⁸ Mark Tinsman, Mass Care Support Specialist, FEMA, ESF #6: Mass Care and Emergency Assistance, email message to author, January 29, 2009.

⁶⁹ DHHS, National Veterinary Response Team, <http://www.hhs.gov/aspr/oepo/ndms/teams/vmat.html> (accessed November 21, 2008).

⁷⁰ DHHS, <http://www.hhs.gov/aspr/oepo/ndms/teams/dmat.html> (accessed December 16, 2008).

⁷¹ DHHS, National Veterinary Response Team.

⁷² DHHS, Federal Public Health and Medical Assistance, <http://www.hhs.gov/disasters/discussion/planners/medicalassistance.html#med#med> (accessed December 23, 2008).

⁷³ United States Public Health Service Commissioned Corps, *Veterinarian – What We Do*, <http://www.usphs.gov/profession/veterinarian/activities.aspx> (accessed January 6, 2009).

⁷⁴ COL Don Noah, DVM, Air Force, Chief of Staff, Office of the Deputy Assistant Secretary of Defense (Force Health Protection & Readiness), formerly Acting Deputy Assistant Secretary (WMD & Biodefense) at the Department of Homeland Security, email message to author, December 19, 2008.

⁷⁵ The American Veterinary Medical Association (AVMA), <http://www.avma.org/reference/marketstats/sourcebook.asp> (accessed September 16, 2008).

⁷⁶ Laura Bennett, "Pet Industry Trends for 2006," December 8, 2005, <http://www.smallbiztrends.com/2005/12/pet-industry-trends-for-2006.html/> (accessed September 18, 2008).

⁷⁷ AVMA, Issues, AVMA Policy, The Human-Animal Bond, (November 2005), http://www.avma.org/issues/policy/human_animal_bond.asp (accessed January 29, 2009).

⁷⁸ Sandra B. Barker, PhD. "Therapeutic Aspects of the Human-Companion animal Interaction", *Psychiatric Times*, Vol. 16, no. 2 (February 1, 1999).

⁷⁹ Heath, *The Public and Animal Health Consequences of Pet Ownership in a Disaster: The January 1997 Flood of Yuba County, California*, (Purdue University, 1999), 11.

⁸⁰ FEMA Emergency Management Institute, Independent Study Program, ISP Courses, IS-10 – Animals in Disaster Module A: Awareness and Preparedness, <http://www.training.fema.gov/IS/crslist.asp> accessed January 29, 2009.

⁸¹ Heath, *The Public and Animal Health Consequences of Pet Ownership in a Disaster*, 10.

⁸² FEMA Emergency Management Institute, IS-10 – Animals in Disaster Module A.

- ⁸³ Heath, *The Public and Animal Health Consequences of Pet Ownership in a Disaster*, 10.
- ⁸⁴ Fritz Institute, "Fritz Institute-Harris Interactive Katrina Survey Reveals Inadequate Immediate Relief Provided to Those Most Vulnerable," (April 26, 2006), <http://www.fritzinstitute.org/prsrmpR-FI-HIKatrinaSurvey.htm>, (accessed February 4, 2009).
- ⁸⁵ Heath, *The Public and Animal Health Consequences of Pet Ownership in a Disaster*, 2.
- ⁸⁶ Secretary Michael Leavitt, DHHS, "Increased Role of Health Diplomacy in U.S. Foreign Policy," Center for Strategic & International Studies, (December 12, 2008), http://www.kaisernetwork.org/health_cast/hcast_index.cfm?display=detail&hc=3092 (accessed January 13, 2009), 19.
- ⁸⁷ Doggie News, "The PETS Act – A Band-Aid on a Big Problem," (October 24, 2005), <http://www.doggienews.com/2005/10/pets-act-band-aid-on-big-problem.htm> (accessed February 12, 2009).
- ⁸⁸ FEMA Emergency Management Institute, IS-10 – Animals in Disaster Module A.
- ⁸⁹ AVMA, Animal Health, AVMA Disaster Preparedness, <http://www.avma.org/disaster/default.asp> (accessed January 29, 2009).
- ⁹⁰ FEMA, Information for Pet Owners, <http://www.fema.gov/plan/prepare/animals.shtm> (accessed January 29, 2009).
- ⁹¹ HSUS, Disaster Preparedness Resources, http://www.hsus.org/hsus_field/hsus_disaster_center/resources/ (accessed January 29, 2009).
- ⁹² CDC, Emergency Preparedness and Response, Protect Your Pets in an Emergency, <http://emergency.cdc.gov/disasters/petprotect.asp> (accessed January 29, 2009).
- ⁹³ National Institute of Health, Coping with Traumatic Events, <http://www.nimh.nih.gov/health/topics/coping-with-traumatic-events/index.shtml> (accessed January 29, 2009).
- ⁹⁴ DHHS, Substance Abuse & Mental Health Services Administration (SAMHSA's) National Mental Health Information Center, Helping Children Cope with Fear and Anxiety, <http://mentalhealth.samhsa.gov/cmhs/managinganxiety/tips.asp> (accessed January 29, 2009).
- ⁹⁵ DHHS, Substance Abuse & Mental Health Services Administration (SAMHSA), *Coping with Traumatic Events*, <http://www.samhsa.gov/trauma/index.aspx#families> (accessed February 10, 2009).
- ⁹⁶ DHHS, Administration for Children & Families, About ACF, http://www.acf.hhs.gov/acf_about.html#mission (accessed February 10, 2009).
- ⁹⁷ FEMA, Fact Sheet: Disaster Assistance Directorate, (August 28, 2008), http://www.fema.gov/pdf/hazard/hurricane/2008/gustav/dad_factsheet2008.pdf (accessed February 10, 2009).

⁹⁸ FEMA, Information for Pet Owners, Plans for Pet Disaster Needs, <http://www.fema.gov/plan/prepare/animals.shtm> (accessed February 12, 2009).

⁹⁹ Big Paw Designs, National Pet Holidays, <http://www.bigpawdesigns.com/napetho.html> (accessed February 12, 2009).

¹⁰⁰ Noah, December 19, 2008.

¹⁰¹ Dr. Kevin Yeskey, MD, Deputy Assistant Secretary and Director of Preparedness and Emergency Operations, Office of the Assistant Secretary for Preparedness and Response (ASPR), DHHS, interview by author, Washington D.C., November 4, 2008.

¹⁰² DHHS, Regional Emergency Coordinators, <http://www.hhs.gov/aspr/oepo/regions/> (accessed December 23, 2008).

¹⁰³ DHHS, Medical Surge Capacity Capability (MSCC), <http://www.hhs.gov/disasters/discussion/planners/mscc.html> (accessed February 6, 2009).

¹⁰⁴ CAPT Hugh Mainzer, DVM, Chief Veterinary Officer, U.S. Public Health Service, interview by author, Washington D.C., November 19, 2008.

¹⁰⁵ CAPT Randolph Daley, et al, "Applied Public Health Teams of the U.S. Public Health Service," Dylan V. Shope, "Peace Forces," briefing slides, Association of Military Surgeons (AMSUS), 114th Annual Meeting, San Antonio, TX, November 9-14, 2008.

¹⁰⁶ DHHS, Hurricane Response Pre-Scripted Sub Tasks, <http://www.hhs.gov/disasters/discussion/planners/playbook/hurricane/scripted-task.html> (accessed December 29, 2008).

¹⁰⁷ DHS, "Fact Sheet: Strengthening Preparedness for Hurricane Season," http://www.dhs.gov/xnews/releases/press_release_0910.shtm (accessed December 29, 2008).

¹⁰⁸ DHHS, Hurricane Response Pre-Scripted Sub Tasks.

¹⁰⁹ Joe Forsha, ESF 8, Office of Preparedness and Emergency Operations, HHS, interview by author, Washington D.C., November 6, 2008.

¹¹⁰ DHHS, Disasters and Emergencies, HHS Concept of Operations Plan (CONOPs), <http://www.hhs.gov/disasters/discussion/planners/conops.html> (accessed February 6, 2009).

¹¹¹ Veterinary Category of the USPHS Homepage, Hurricane Relief, *PHS Commissioned Corps Deploys Public Health Professionals to Provide Hurricane Relief*, (October 1, 2004), <http://www.fda.gov/cvm/relief.htm> (accessed January 18, 2009).

¹¹² Ostrowski, November 5, 2008.

¹¹³ CAPT Roberta Lavin, USPHS, Director, Office of Human Services, Emergency Preparedness & Response; Administration for Children and Families, DHHS, interview by author, Washington D.C., November 12, 2008.

¹¹⁴ Ibid.

¹¹⁵ DHS, FEMA, About US&R, <http://www.fema.gov/emergency/usr/about.shtm> (accessed February 24, 2009).

¹¹⁶ DHS, FEMA, Canine Search and Rescue Team – Disaster Response, http://www.fema.gov/emergency/usr/canine_disaster.htm (accessed February 24, 2009).

¹¹⁷ U.S. Search and Rescue Task Force – Dogs in Search & Rescue, http://www.ussartf.org/dogs_search_rescue.htm#top (accessed February 24, 2009).

¹¹⁸ DHS, FEMA, US&R Participants, <http://www.fema.gov/emergency/usr/participants.shtm#IST> (accessed February 24, 2009).

¹¹⁹ DHS, FEMA, US&R Participants, Urban Search and Rescue (US&R) Incident Support Team (IST) Operations Manual, 9356.2-PR (January 19, 2000), http://www.fema.gov/pdf/emergency/usr/ist_ops_manual.pdf (accessed February 24, 2009), H-61.

¹²⁰ Jim Hamilton, DVM, Commander, National Veterinary Response Team-3, email message to author, December 17, 2008.

¹²¹ Yeskey, November 4, 2008.

¹²² DHHS, <http://www.hhs.gov/aspr/oepo/ndms/teams/vmat.html> (accessed November 21, 2008).

¹²³ Ibid.

¹²⁴ Commander Meta Timmons, PHS, Chief Veterinary Operations, NDMS, DHHS, email message to author, December 17, 2008.

¹²⁵ Katie Burns, “Veterinary Response Teams Offer Opportunities to Volunteer.”

¹²⁶ Jennifer Fiala, “The New Face of Disaster Response.”

¹²⁷ Ostrowski, November 5, 2008.

¹²⁸ Alicia Pacewicz, Program Analyst, DHHS, ASPR Logistics, email message to author, January 29, 2009.

¹²⁹ Maryann Veitch, Logistics, ASPR, DHHS, telephone interview by author, February 3, 2009.

¹³⁰ American Veterinary Medical Foundation, <http://www.avmf.org/index.php?submenu=DisasterRelief&src=gendocs&ref=DisasterRelief&category=WhatWeDo> (accessed December 18, 2008).

¹³¹ DHHS, Federal Public Health and Medical Assistance, <http://www.hhs.gov/disasters/discussion/planners/medicalassistance.html#med#med> (accessed December 23, 2008).

¹³² Mark Tinsman, Mass Care Support Specialist, FEMA, ESF #6: Mass Care and Emergency Assistance, interview with author, December 2, 2008.

¹³³ Ibid.

¹³⁴ Patrice N. Klein, MS VMD DACPV DACVPM, NVRT-1 Co-Commander, Senior Staff Veterinarian/ Avian Disease Specialist, USDA/APHIS/Veterinary Services, interview with author, December 2, 2008.

¹³⁵ Joe Forsha, ESF 8, Office of Preparedness and Emergency Operations, DHHS.

¹³⁶ DHHS, ASPR, Regional Emergency Coordinators, <http://www.hhs.gov/aspr/opeo/regions/> (accessed December 23, 2008).

¹³⁷ MAJ Kelley Evans, DVM, Chief, South Texas Branch Veterinary Services, U.S. Army Veterinary Corps, e-mail message to author, December 23, 2008.

¹³⁸ The National Council for Public-Private Partnerships Homepage, *How Partnerships Work, Public-Private Partnerships Defined*, <http://www.ncppp.org/howpart/index.shtml#define> (accessed January 18, 2009).

¹³⁹ The National Council for Public-Private Partnerships Homepage, *Open Letter to the New Administration*, <http://www.ncppp.org/> (accessed January 18, 2009).

¹⁴⁰ American Red Cross Homepage, *About Us*, <http://www.redcross.org/portal/site/en/menuitem.d8aaecf214c576bf971e4cfe43181aa0/?vgnextoid=477859f392ce8110VgnVCM10000030f3870aRCRD&vgnextfmt=default> (accessed January 21, 2009).

¹⁴¹ FEMA, "FEMA and the National Voluntary Organizations Active in Disaster Partner in Citizen Corps," (May 14, 2003), <http://www.fema.gov/news/newsrelease.fema?id=3060>, (accessed February 19, 2009).

¹⁴² National Voluntary Organizations Active in Disaster Homepage, *About Us*, <http://www.nvoad.org/AboutUs/tabid/70/Default.aspx> (accessed January 21, 2009).

¹⁴³ Ibid.

¹⁴⁴ Dennison, January 16, 2009.

¹⁴⁵ HSUS Homepage, *"The HSUS Teams up with USDA to Promote Disaster Preparedness for Animals,"* May 23, 2008, http://www.hsus.org/press_and_publications/press_releases/the_hsus_teams_up_with_usda_to_promote_disaster_preparedness_for_animals.html (accessed December 30, 2008).

¹⁴⁶ Davidson, November 25, 2008.

¹⁴⁷ Case, February 2, 2009.

¹⁴⁸ CAPT Tom Bowman, USPHS, Regional Emergency Coordinator, Region IV, ASPR, DHHS, email message to author, February 24, 2009.

¹⁴⁹ Davidson, January 29, 2009.

¹⁵⁰ Bowman, February 24, 2009.

¹⁵¹ Davidson, January 29, 2009.

¹⁵² Dennison, January 17, 2009.

¹⁵³ Mark Tinsman, Mass Care Support Specialist, FEMA, ESF #6: Mass Care and Emergency Assistance, interview with author, December 2, 2008.

¹⁵⁴ Barry Kellogg, DVM, Senior Veterinary Advisor, HSUS, Humane Society International, interview with author, December 4, 2008.

¹⁵⁵ Dr. Dan Dodgen, Ph.D., Director, Office for At Risk Individuals, Behavioral Health, and Human Services Coordination, ASPR, DHHS, interview by author, Washington D.C., December 8, 2008.

¹⁵⁶ Dennison, January 28, 2009.

¹⁵⁷ AVMA Chief Executive Officer, Dr. W. Ron DeHaven, letter for Secretary Michael Chertoff, U.S. Department of Homeland Security, Washington D.C., http://www.avma.org/advocacy/federal/regulatory/emergency_prep/pets_act_DHS_FEMA_NRF_ltr.pdf (accessed January 23, 2009).

¹⁵⁸ Overview: ESF and Support Annexes Coordinating Federal Assistance In Support of the National Response Framework, January 2008, U.S. Department of Homeland Security, <http://www.fema.gov/pdf/emergency/nrf/nrf-overview.pdf> (accessed January 28, 2009).